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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
| 10/648,523 | 08/26/2003 | Dong-Hoon Kim | 21C-0065 | 4676 |
| <div>7590 CANTOR COLBURN LLP 55 Griffin Road South Bloomfield, CT 06002</div> | | | <div>EXAMINER NEGRON, ISMAEL</div> | |
| | | | <div>ART UNIT 2885</div> | <div>PAPER NUMBER</div> |
| SHORTENED STATUTORY PERIOD OF RESPONSE | | | MAIL DATE | |
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Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/648,523

Applicant(s)

KIM ET AL.

Examiner

Ismael Negron

Art Unit

2885

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 January 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4-6,9-63,65 and 67-73 is/are pending in the application.
- 4a) Of the above claim(s) 22-57 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,4-6 and 9-21 is/are allowed.
- 6) ☒ Claim(s) 58-63,65 and 67-73 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 9/5/2006.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. Applicant's amendment filed on January 2, 2007 has been entered. Claims 4, 58, 63 and 68 have been amended. Claim 66 has been cancelled. Claim 73 has been added. Claims 1, 4-6, 9-21, 58-63, 65 and 67-72 are still pending in this application, with claims 1, 22, 40, 46, 52, 58, 63 and 73 being independent. Claims 22-57 have been withdrawn from consideration.

Claim Rejections - 35 USC § 112

First Paragraph

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 58-62 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The invention, as described in the specification and shown in the drawings (as filed), features a light guide plate having a plurality of dots protruding from an emission surface of the light guide plate. A surface of the dots includes a plurality of V-shaped

reflecting surfaces disposed in one of a plurality of arrangements (see figures 9, 10 and 11A). The only protruding structure disclosed are the cited dots, and the only reflecting surfaces disclosed as being formed on the surface of the dots are V-shaped grooves.

Amended Claim 58 defines the instant invention as including a column-shaped protrusion formed on the emission surface of the light guide plate (not the disclosed "dots"), the surface of such protrusion including a plurality of dots having V-shaped grooves. This newly presented protrusion structure is new matter, as it is neither described in the specification nor shown in the drawings, as filed.

3. Claims 63, 65 and 67-72 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The invention, as described in the specification and shown in the drawings (as filed), features a light guide plate having a plurality of elements protruding from an emission surface of the light guide plate, such elements having a geometrically regular pattern. The protruding elements are a plurality of microgrooves shown and described as having substantially the same depth.

Amended Claim 63 defines the instant invention as including a plurality of microgrooves, each of such microgrooves having different a depth. This newly presented microgroove structure is new matter, as it is neither described in the specification nor shown in the drawings, as filed.

Second Paragraph

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 58-62 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Claim 58 is indefinite as it is not clear what the limitation "*the V-shaped grooves being linked together*" (lines 9 and 10) means.

The applicant is advised that in the comparing the claimed invention with the Prior Art, the cited limitations were not given any patentable weight.

6. Claims 59-62 are rejected for their dependency on rejected Claim 58.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims, 63, 65 and 67, 69, 71 and 72 are rejected under 35 U.S.C. 102(b) as being anticipated by PRISTASH et al. (U.S. Pat. 5,136,480).

8. PRISTASH et al. discloses a light guide plate having:

- **a light incident surface (as recited in Claim 63), Figure 5, reference number 45;**
- **the light incident surface being for receiving light (as recited in Claim 63), column 4, lines 56-58;**
- **a first light emission surface (as recited in Claim 63), as seen in Figure 3;**
- **a second light emission surface (as recited in Claim 63), as seen in Figure 3;**
- **the light emission surfaces being for emitting light (as recited in Claim 63), inherent;**
- **the first emission surface including a plurality of protrusions (as recited in Claim 63), Figure 5, reference number 43;**
- **the protrusions having a geometrically regular pattern (as recited in Claim 63), as seen in Figure 5;**
- **the geometrically regular pattern being a plurality of microgrooves (as recited in Claim 63), Figure 5, reference number 42;**
- **the microgrooves having different depths (as recited in Claim 63), as seen in Figure 5;**

- **the microgrooves being linked along a boundary of the protrusions (as recited in Claim 65), as seen in Figure 5;**
- **the density of the geometrically regular pattern varying according to the distance from a light source (as recited in Claim 67), as seen in Figure 5;**
- **the size of the protrusions being larger as they move closer to the light incident surface (as recited in Claim 69), as seen in Figure 6;**
- **the geometrically regular pattern being a plurality of fine structures (as recited in claims 71 and 72), as seen in Figure 5;**
- **the fine structures having different heights (as recited in Claim 71), as seen in Figure 5; and**
- **the fine structures being linked together (as recited in Claim 72), as seen in Figure 5.**

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claim 73 is rejected under 35 U.S.C. 103(a) as being unpatentable over RYU et al. (U.S. Pat. Pub. No. 2002/0181223 A1) in view of ISHIKAWA et al. (U.S. Pat. 5,600,455).

10. RYU et al. discloses an light guide plate having:

- **a light incident surface for receiving light from a light source (as recited in Claim 73), as seen in Figure 4;**
- **a first light emission surface (as recited in Claim 73), as seen in figures 6a-7b;**
- **a second light emission surface (as recited in Claim 73), as seen in figures 6a-7b;**
- **the emission surfaces being for emitting light (as recited in Claim 73), inherent, as light will always exit the surface at some angle;**
- **a plurality of protrusions formed on the first light emission surface (as recited in Claim 73), Figure 4, reference number 21; and**
- **the protrusion being circular cylinder-shaped (as recited in Claim 73), as seen in Figure 6a.**

11. In addition, RYU et al. discloses the shape of the dots (triangular pyramid, cylinder, polyhedron, and the like), and its height/depth being determined by the particular requirements (e.g. brightness level, brightness uniformity, scattering angle, etc.) of a specific application. See paragraphs 42 and 43.

12. RYU et al. discloses all the limitations of the claims, except the protrusion having grooves (as recited in Claim 73).

13. ISHIKAWA et al. discloses an illumination device having:

- **a light source**, Figure 10, reference number 5;
- **a light guide plate (as recited in Claim 73)**, Figure 10, reference number 6;
- **the light guide plate having a light incident surface for receiving light from the light source (as recited in Claim 73)**, as seen in Figure 10;
- **a transparent member**, Figure 7, reference number 1;
- **the transparent member having a plurality of prisms**, Figure 7, reference number 10;
- **the prisms having grooves**, Figure 7, reference number 11.

14. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the microgrooves ISHIKAWA et al. as the geometrically regular pattern of the patented structure of RYU et al. (as recited in Claim 73), to achieve a desired brightness and uniformity of the emitted light, as per the teachings of RYU et al. and ISHIKAWA et al.

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15. **Regarding claims 58-62, 68 and 70**, which have been rejected under 35 U.S.C. 112, first paragraph (see previous sections 2 and 3), the applicant is advised that no prior art was found teaching individually, or suggesting in combination, a light guide plate having a light incident surface and first and second light emission surfaces, such first light emission surface including either: a) a protrusion having a light reflecting pattern formed on an upper surface, such reflecting pattern including a plurality of dots with V-shaped grooves (as recited in claims 58-62); or b) a plurality of protrusions having a geometrically regular pattern of microgrooves with different depths, the density of such protrusions varying with respect to the distance to the light incident surface (as recited in claims 68 and 70).

Therefore no art rejections has been made of claims 58-62, 68 and 70.

Allowable Subject Matter

16. Claims 1, 4-6 and 9-21 are allowed.

17. The following is a statement of reasons for the indication of allowable subject matter:

Applicant teaches a light guide plate having a first and second light emission surfaces, and a light-reflecting pattern formed on the first emission surface. The pattern includes a plurality of dots for reflecting light from the first surface toward the second surface, such reflected light exiting the second surface at a greater angle than light emitted by the first surface. Each dot having light reflecting surfaces elongated in a

selected direction, with adjacent light reflecting surfaces meeting each other at the elongated edges to form an angle between the adjacent reflecting surfaces.

No prior art was found teaching individually, or suggesting in combination, all of the features of the applicants' invention, specifically the dots having elongated light reflecting surfaces, with adjacent light reflecting surfaces meeting each other at the elongated edges to form an angle between the adjacent reflecting surfaces.

Response to Arguments

18. Applicant's arguments with respect to claims 58-63, 65 and 67-72 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

19. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

20. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ismael Negrón whose telephone number is (571) 272-2376. The examiner can normally be reached on Monday-Friday from 9:00 A.M. to 6:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jong-Suk (James) Lee, can be reached on (571) 272-7044. The facsimile machine number for the Art Group is (571) 273-8300.

22. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, go to <http://pair-direct.uspto.gov>. Should you have questions on access to Private PAIR system, contact the Electronic Business Center (EBC) toll-free at 866-217-9197.


Ismael Negrón
Examiner
AU 2885


JONG-SUK (JAMES) LEE
SUPERVISORY PATENT EXAMINER